AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the

application:

LISTING OF CLAIMS:

1.   (currently amended): An initial synchronization method in a DS-CDMA inter-

base station asynchronous cellular scheme of transmitting a spreading code sequence ~~constituted~~

~~by~~comprising a long code unique to each cell and a short code corresponding to each

communication channel, an identification code (common identification code) common to each

cell in a predetermined period (slot), and a long code group identification short code

corresponding to the long code in each cell upon multiplexing the codes, comprising:

a first stage ~~including the step of~~comprising

detecting correlation power values between the common identification code and a

received signal by using a correlator, and detecting a long code timing from a

corresponding base station on the basis of a maximum value of the correlation power

values, and

performing a threshold determination by comparing the maximum correlation

power value with an arbitrary threshold, and performing processing again from the first

stage if the maximum correlation power value does not exceed the threshold;

a second stage ~~including the step of~~comprising

detecting a correlation value between the received signal and each long code

group identification short code, and obtaining a sum of the correlation values

corresponding to the number of long code group identification short codes in each slot

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according to a transmission pattern of long code group identification short codes in each

predetermined long code group,

the step of setting a group having a maximum correlation sum as a group to which

a long code of the received signal belongs,

the step of detecting a slot in which a head of the pattern is obtained as a start slot

of a frame, and

the step of comparing an arbitrarily set threshold with the maximum correlation

sum and performing processing again from the first stage if the maximum correlation

sum does not exceed the threshold; and

a third stage including the step of comprising

sequentially generating replica codes of long codes and short codes from long

code candidates included in the long code group identified in the second stage,

performing correlation detection for the obtained synchronization timing,

performing long code correlation detection to check whether the correlation

detection value exceeds an arbitrary threshold,

returning to the first stage if none of correlation detection values of all long codes

exceeds the threshold, and

determining a long code exceeding the threshold as a long code of a target cell,

performing synchronization detection by using a frame sync signal, completing initial

synchronization if synchronization is detected, and returning to the first state if

synchronization is not detected.;

wherein at least one of said arbitrary thresholds is set after at least one of said maximum

power value, maximum correlation sum and maximum correlation detection value, are excluded.

2.   (currently amended): A method according to claim 1, wherein the threshold

determination in the first stage ~~includes the step of~~comprises obtaining an average of correlation

power values, from which given correlation values ranging from the maximum correlation power

value to a correlation power value of an arbitrary ordinal number ~~therefrom~~ correlation value and

correlation values before and after the given correlation power values are excluded, and setting

the average as an arbitrary threshold.

3.   (currently amended): A method according to claim 1, wherein the threshold

determination in the second stage ~~includes the step of~~comprises obtaining an average of the

respective correlation sums, from which the detected maximum correlation sum is excluded, and

setting the average as an arbitrary threshold.

4.   (currently amended): A method according to claim 1, wherein identification of a

long code in the third stage ~~includes the step of~~comprises

sequentially generating replica codes of long codes and short codes from long code

candidates included in the identified long code group,

performing correlation detection for an obtained synchronization timing,

detecting correlation values of long codes to check whether the correlation detection

value exceeds an arbitrary threshold,

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returning to the first stage if none of the correlation detection values of the long codes

exceeds the threshold,

determining a long code as a long code in a target cell if the long code exceeds the

threshold,

performing synchronization detection by using a frame sync signal,

determining completion of initial synchronization if synchronization is detected, and

returning to the first stage if synchronization is not detected.

5.   (currently amended): A method according to claim 1, wherein threshold

determination in the third stage ~~includes the step of~~comprises obtaining an average of the

respective correlation detection values, from which a detected maximum correlation detection

value is excluded, and setting the average as an arbitrary threshold.

6.   (currently amended): A DS-CDMA cellular system using an initial

synchronization method in a DS-CDMA inter-base station asynchronous cellular scheme of

transmitting a spreading code sequence constituted by a long code unique to each cell and a short

code corresponding to each communication channel, an identification code (common

identification code) common to each cell in a predetermined period (slot), and a long code group

identification short code corresponding to the long code in each cell upon multiplexing the

codes, comprising:

a first section ~~including~~comprising

means for detecting correlation power values between the common identification code and a received signal by using a correlator, and detecting a long code timing from a corresponding base station on the basis of a maximum value of the correlation power values, and

means for performing threshold determination by comparing the maximum correlation power value with an arbitrary threshold, and performing processing again from processing in said first section if the maximum correlation power value does not exceed the threshold;

a second section ~~including~~ comprising

means for detecting a correlation value between the received signal and each long code group identification short code, and obtaining a sum of the correlation values corresponding to the number of long code group identification short codes in each slot according to a transmission pattern of long code group identification short codes in each predetermined long code group,

means for setting a group having a maximum correlation sum as a group to which a long code of the received signal belongs,

means for detecting a slot in which a head of the pattern is obtained as a start slot of a frame, and

means for comparing an arbitrarily set threshold with the maximum correlation sum and performing processing again from processing in said first section if the maximum correlation sum does not exceed the threshold; and

a third section ~~including~~ comprising

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means for sequentially generating replica codes of long codes and short codes

from long code candidates included in the long code group identified in said second

section,

means for performing correlation detection for the obtained synchronization

timing,

means for performing long code correlation detection to check whether the

correlation detection value exceeds an arbitrary threshold,

means for returning to processing in said first section if none of correlation

detection values of all long codes exceeds the threshold, and

means for determining a long code exceeding the threshold as a long code of a

target cell, performing synchronization detection by using a frame sync signal,

completing initial synchronization if synchronization is detected, and returning to

processing in the first state if synchronization is not detected-;

wherein at least one of said arbitrary thresholds is set after at least one of said maximum

power value, maximum correlation sum and maximum correlation detection value, are excluded.

7.   (currently amended): A system according to claim 6, wherein said first section

comprises means for obtaining an average of correlation power values, from which given

correlation values ranging from the maximum correlation power value to a correlation power

value of an arbitrary ordinal number therefrom correlation value and correlation values before

and after the given correlation power values are excluded, and setting the average as an arbitrary

threshold.

8.   (currently amended): A system according to claim 6, wherein said second section comprises means for obtaining an average of the respective correlation sums, from which the detected maximum correlation sum is excluded, and setting the average as an arbitrary threshold.

9.   (original): A system according to claim 6, wherein said third section comprises means for sequentially generating replica codes of long codes and short codes from long code candidates included in the identified long code group, performing correlation detection for an obtained synchronization timing, detecting correlation values of long codes to check whether the correlation detection processing in said first section if none of the correlation detection values of the long codes exceeds the threshold, determining a long code as a long code in a target cell if the long code exceeds the threshold, performing synchronization detection by using a frame sync signal, determining completion of initial synchronization if synchronization is detected, and returning to processing in said first section if synchronization is not detected.

10.   (currently amended): A system according to claim 6, wherein said third section comprises means for obtaining an average of the value exceeds an arbitrary threshold, returning to respective correlation detection values, from which a detected maximum correlation detection value is excluded, and setting the average as an arbitrary threshold.